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ABSTRACT

The dental utilization patterns of Chicanos and Anglos were compared using several socio-demographic variables to explain any differences or similarities existing between the two groups. Data for this study were part of an extensive household survey conducted in Pima County, Arizona, to obtain information on various health indicators concerning utilization, delivery systems, access, satisfaction of health consumers, and demographic characteristics of consumers. During December 1972 and from January to March 1973, personal interviews were conducted in 1,681 households. Of these, 1,581 were used for this study. Variables used were: family income, family size, age, sex, education, residence, socioeconomic status, and cultural variation. Sex and residence were dummied in the regression analysis. Findings included: Chicanos not only underutilized dental services, but the services they did use were primarily those of a "symptomatic" nature; for Chicanos, socioeconomic variables played a negligible role in explaining dental utilization, although they were more important for Anglos; a substantially larger proportion of Chicanos had not seen the dentist in the past year, and of those who had, the pattern of frequency of visitations was a lesser number of visits for Chicanos than Anglos; and Chicanos had a higher proportion of tooth extractions and dentures. (NQ)

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THE UTILIZATION OF DENTAL HEALTH SERVICES BY CHICANOS AND ANGLOS

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ABSTRACT

This study is a comparative analysis of dental utilization patterns of Chicanos and Anglos using several socioeconomic variables to explain differences and similarities. Chicanos not only underutilize dental services but the services they do use are primarily those of a "symptomatic" nature. For Chicanos, socioeconomic variables play a negligible role in explaining dental utilization, although they are more important for Anglos. Finally, the incorporation of cultural and situational constraints into already existing SES models of explanation is recommended for the future research of dental utilization practices of this minority population.

THE UTILIZATION OF DENTAL HEALTH SERVICES BY CHICANOS AND ANGLOS*

As one examines the dearth of information about the health of Chicanos, one quickly realizes that it still remains largely unexplored (Juarez and Garcia, 1976). But as one begins to explore the research on Chicanos within the health care sector, e.g., dental health, the diagnosis is a dismal one. Almost nothing has been written that systematically addresses itself to this vacuum of Chicano research. The purpose of this study is an effort to investigate the yet to be explored dental health care practices of Chicanos. This will be accomplished by comparing the dental utilization patterns of Chicanos and Anglos using several socio-demographic variables to explain any differences or similarities that may exist between the two ethnic groupings.

DENTAL UTILIZATION: KEY FACTORS

Almost everyone has dental needs at some stage of their lives, yet not everyone avails themselves to dental services. The mere variation in the use of dental services indicates that a number of factors influence people's decisions to use dental services. Some key factors which have been identified in previous studies include: socioeconomic status, age, sex, parental influence, psychological factors (e.g., fear, anxiety, and perceptions of dentists), and cultural variation.

Socioeconomic Status

Socioeconomic status has been one of the more prominent factors associated with utilization of dental services (Newman and Anderson, 1972). The combination of income, education and occupational status have collective

effects on the frequency of dental visits as well as the extent of dental services utilized. In addition, each component has an independent effect on utilization. Income is a key determinant of dental utilization, particularly among poverty populations (Hochstim, et al., 1968; Schonfeld and Milone, 1972). Moen (1954) reported a significant difference in the frequency of dental visits according to patients' income levels. Similarly, Kreisberg and Treiman (1960:20-30) discovered a strong positive relationship between teenagers' preventive utilization of dentists' services and family income. Finally, Hay et al. (1953) examined six New York counties and observed a positive correlation between dental utilization and one's family income.

The second component, occupational status, has some independent effect on utilization. Nikias (1968) looked at utilization patterns within a pre-payment dental program and related usage to one's social class. Higher status occupational groups such as white collar individuals used the services more than blue collar persons.

Education, another component, is related to differences in dental care behavior. O'Shea and Gray (1968:407) found significant differences based on education and income which indicate that as one's educational attainment increased, so did frequency of visits to the dentist. Two-thirds of the college educated persons and three-fourths of the post-graduates saw a dentist, irrespective of income category, compared to one-fifth of individuals who had less than a sixth grade education.

A substantial number of studies have corroborated the impact of socio-economic status on dental utilization (Lambert and Freeman, 1967; Metzner, 1960; Jong, 1968; Collins, 1967). The area of some uncertainty, however,

is the degree of influence each variable plays on dental utilization. Kreisberg and Treiman (1960) contend that lack of financial resources is the single most important factor. However, Metzner (1960) found in a prepayment plan in St. Louis that the removal of cost obstacles did not produce a heightened wave of dental use. Cons and Leatherwood (1970) made a similar contention, i.e., that cost is the major factor. Irrespective of the most prominent contribution by the components of socioeconomic status, collectively and individually, education, income and occupation are critical factors in dental care utilization.

Sex and Age Factors

Two other demographic factors that affect utilization are sex and age. Friedman and Feldman (1968) and Butler (1967) found that there was a tendency for females to visit dentists more. Anderson (1957:72) also found that in all age groups, with the exception of the over sixty-five category, women were more likely to consult a dentist.

Age also plays a role as the young and elderly are less likely to visit a dentist regularly. Moen (1954:74) found that 75 percent of children under five and 25 percent of children between 5-9 years had never seen a dentist. Moen and Poetsch (1970) examined patient records of 35,793 individuals and found that the least representative were the under five group. In addition, they found that females were more frequent patients than males.

Finally, Rayner (1970) examined mothers' attitudes and dental practices as influencing factors affecting their children's dental habits. Her analysis indicated a linkage of social class affecting dental values and attitudes of mothers which in turn affected their children's dental behavior. This linkage was strongest among middle-class mothers than lower- or upper-

class mothers. Thus, social class influences the dental values of the mother which in turn affect her family's utilization patterns.

Ethnicity and Poverty

In addition to the sociodemographic variables already mentioned, race and ethnicity have also been found to be related to utilization. In several studies, the examination of poverty status among minority groups has been the most common avenue to pursue when examining dental utilization. Leverett and Jong (1970) found variations of dental care usage by low-income black and white populations. Nikias' (1971) secondary analysis of 1960 and 1965 case studies related dental practices to ethnic and income differences. Morrison, et al. (1965) examined patients' records to determine prominent characteristics of metropolitan dental populations and found race and ethnicity to be important variables. Finally, a study in Oakland by Hochstim, et al. (1968) reported more chronic conditions and disabilities among poverty residents than nonpoverty ones. Forty-eight percent of the poverty residents had had no dental checkup in the past two years. Dental checkups and insurance were the primary health situational differences between the two types of residents, and income, along with race, served as important predictors of health status and utilization.

Although race and poverty have been examined somewhat, dental health services of Chicanos, Puerto Ricans, and other Spanish speaking groups have not received much investigation. The studies that have looked at cultural differences are mostly limited to ethnic groups living in the metropolitan areas of the Northeast and generally not in the dental health area. For the most part, studies of health care behavior of Chicanos have examined the role of folk medical practices. For example, it has been suggested by Irelan (1966)

that minor health problems are dealt with by Chicanos themselves (individually or within the family structure) and visit hospitals and medical personnel less because of the impersonalness of the medical system. Saunders (1954) attributes Anglo-Mexican American differences to the varying degrees of acculturation, particularly among the rural Mexican American. For example, urban Mexican Americans are expected to exhibit fewer differences in their health behavior from urban Anglos than their counterparts in the rural areas.

Suchman (1963) suggests that dental utilization is infrequent among the Spanish-speaking as these individuals do not perceive the need for dental services unless continual pain is experienced. This would affect the utilization pattern, as well as the types of dental services sought. In a later study, Suchman and Rothman (1968) suggest that variation of cultural forces is also due to group identification. The degree to which an individual identifies with his own ethnic group affects the extent of his dental visits. The more parochial (higher group identification) the individual is, the less likely he will use dental services.

Another study that dealt with Chicano dental behavior was that of Pettibone and Solis (1974). Their study in New Mexico reached several conclusions. Both Anglos and Chicanos in the lower socioeconomic levels perceive dental costs as financial barriers to obtaining dental services. For Chicanos, family income was a more important determinant of services than socioeconomic status. The two factors that significantly determined dental care were financial (i.e., perceived financial barriers, family income, socioeconomic status) and "symptomatic orientation" toward dental care. This applied to both rural and urban Chicanos.

Tash, O'Shea and Cohen (1969) have identified a number of variables, in addition to socioeconomic status, that affect the utilization of dental services. They include fear, anxiety, dental knowledge, sex, age, ethnicity, and rural vs. urban residence. Most of these factors work independently. Irrespective of the factors within the cultural experiences that influence Chicano health behavior, it becomes important to establish the differentials and similarities between Anglos' and Chicanos' dental utilization, and then make some attempts to establish the role and importance of individual factors. This study examines the utilization of dental services by Anglos and Chicanos as an effort to explore variations and assess the relative importance of sociodemographic variables on these utilization patterns.

RESEARCH DESIGN AND METHODOLOGY

Data

Data for this study was part of an extensive household survey conducted in Pima County, Arizona, for the purpose of gathering information on a variety of health indicators concerning utilization, delivery systems, access, satisfaction of health consumers, and demographic characteristics of consumers (Pima Health Systems, Inc., 1973). Pima Health Systems, started by the Health Planning Council, administered the health questionnarie to county residents during the months of December 1972 and January to March 1973. The door-to-door survey was administered by trained interviewers who conducted personal interviews in 1681 households. Only 1581 cases are used in this particular analysis; the missing 100 cases were eliminated due to incomplete information.

The sample of households was selected by a two-stage cluster sample procedure. After city blocks or other geographic areas in the county were randomly selected by computer, Pima Health Systems' staff members

listed the addresses of each dwelling unit in each of the areas. Twenty-one thousand dwelling units were listed by this method. From these listings, the households to be interviewed were randomly selected. Even though the sample design insured selection of areas within the entire county, the residential concentration of Chicanos in particular sections of the city resulted in a lesser than expected selection of Chicano households. In order to compensate for this apparent underrepresentation, the sample was weighted to put the groups more in proportional balance. The object was to enhance the comparative analysis of Chicanos and Anglos.

At this point, a brief comparison of some sociodemographic characteristics between the two ethnic groupings seems in order, (see Table 1). Not

(Table 1 about here)

surprisingly, the differential profiles between the two ethnic groupings are similar to those documented by other popular sources (Grebler, Moore, and Guzman, 1970; Moore, 1976). One major difference between the two groupings was family size. Chicanos averaged 4.42 children per family compared to 3.06 for Anglos. Also, Chicanos had lower mean incomes ($7,320 vs. $8,250) and a greater percentage were below the poverty level (16.9 percent vs. 2.3 percent). Mean age of Chicano primary respondents was 40.36 years vs. 44.53 years of the Anglo primary respondents. Chicanos had achieved 10.6 mean years of education contrasted to 12.4 mean years for Anglos.

In the preceding sections, several variables that are believed to help explain the utilization of dental health services were mentioned. Among these are family income, family size, age, sex, education and residence. The variables of family income, family size, age and education were used in interval form. The variables of sex and residence were dummied in the regression analysis.

DISCUSSION

The type of dental visits between Chicanos and Anglos were found to be clearly different and statistically significant (see Table 2). Even though

(Table 2 about here)

the majority of both Chicanos and Anglos obtained the type of services generally considered with the thought of "saving the tooth," Anglos did so to a larger extent than Chicanos (Anglo = 66.4 percent, Chicanos = 56.2 percent). One important differential that was clearly apparent was the proportion of extractions for Chicanos at a rate of more than twice that of Anglos. In the area of cosmetic services/oral surgery and orthodontia, Anglos used those types of services at slightly twice the rate of Chicanos. The use of dentures was also found to be higher among Chicanos than Anglos but not by a substantial margin. The type of utilization by Chicanos, at least in this study, seems to be more oriented to "after the fact" services such as extractions and dentures, than preventive or cosmetic services.

Clear and statistically significant differences were also noted between the two groupings in regards to the number of times they had visited the dentist during the last year (see Table 3). Even though a substantially

(Table 3 about here)

large proportion of persons from both groupings had not seen a dentist in the last year, Chicanos had not done so in larger numbers than Anglos (Chicanos = 58.9 percent, Anglos = 43.5 percent). Slightly more Anglos than Chicanos had seen a dentist at least once or more times during the year; nevertheless, the disparities between the two groupings were not very substantial.

In order to obtain at least a partial explanation as well as feeling for what types of variables and how they might be contributing toward these

differentials, frequency of dental visits was regressed on several social and economic variables that have been found to have some relationship to dental utilization.

The type of regression used was step-wise. These results are illustrated in Table 4. For Chicanos, none of the seven explanatory variables used were

(Table 4 about here)

significant. Even more puzzling was the very small proportion of explained variance (approximately 3 percent). Two "cultural" variables (Juarez and Garcia, 1976:10) which had been expected to be especially crucial for Chicanos were in fact the last ones to be included in the model. These were family size and residence in a barrio. Results for the Anglos were not all that impressive either, but nevertheless three of the seven variables were significant: education, family income and age. The amount of explained variance was slightly more than twice that of Chicanos but still considerably small (6.8 percent). Of this proportion, level of education accounted for approximately 5 percent. Both level of education and family income affected the frequency of dental visits in a positive manner, with level of education indicating the stronger effect. Thus, for Anglos, the higher the level of education and family income, the higher the frequency of visits. The effect of age, in a milder manner than the education and family income, was in a negative direction indicating that the younger population of Anglos frequented the dentist the most.

One other finding that should be pointed out is the order of the standardized Beta-weights in each of the groupings. Even though it is not possible with this level of analysis to compare one ethnic grouping to the other without further statistical testing for differentials, at least some idea is obtained

how these variables are affecting each grouping's utilization rates. For example, the variables which affected Anglos, and in their order of magnitude, were education, family income, and age. In the case of Chicanos (recalling that the findings were not statistically significant) the variable of age weighed the heaviest followed closely by education. Surprisingly, family income was fourth in order of magnitude. One probable and cautious explanation that needs to be explored further in the light of these findings concomitantly with those of Tables 2 and 3 is that Chicanos appear to have a tendency for waiting longer before visiting a dentist. Three indications here are: (1) age of patients (the older they are, the more they are to visit); (2) the larger proportion of extractions and lesser proportion of routine exams and/or cleaning; and (3) the larger proportion who haven't seen a dentist in the last year. Possibly, a more instructive type of analysis would have been one which incorporated the severity of the presenting dental problem as a dependent variable. Although reasons were stated for seeing a dentist, they did not lend themselves to the construction of a severity index.

A further comparison of time durations since persons had seen a dentist produced statistically significant differences between the two ethnic groupings, (see Table 5). Within the range of 12 months to less than 5 years, the

(Table 5 about here)

patterns of visitation for Chicanos and Anglos were strikingly similar. Where the two groupings differed considerably was in the "five years or more" and "never been" categories. In the "five years or more" category Anglos far outnumbered Chicanos but in the "never been" category Chicanos far outnumbered the Anglos.

"Time since last seen the dentist" was regressed in a similar form to the prior analysis on frequency of visitations. This time the levels of explained

variance were considerably higher for both groups and furthermore, these levels were quite similar (Chicano = 13.87 percent and Anglos = 14.39 percent) (see Table 6). Two of the seven variables used in the Chicano model were

(Table 6 about here)

significant: rural-urban residence and education. Contrary to what was expected, it seems that Chicanos who live in urban areas were more likely to have had a longer period of time since last visiting a dentist, than Chicanos from rural areas. This finding may be affected largely by the small number (n = 17) of Chicanos in the sample who lived in rural areas. The variable of education had a negative effect on the length of time since the last dental visit (i.e., the lower the educational level the greater the tendency to prolong the time between dental visits). Among Anglos, the same three variables that demonstrated significance in relation to the frequency of dental visits also indicated significance in relation to the time since the person had last seen a dentist. These were age, education, and family income. However, both the order of entry into the model and the magnitude of the variables as indicated by the Beta-weights were different. The relationship between age and interval since last visit was in a positive direction indicating that the older they were, the greater the interval. Both education and family income were in a negative direction, indicating that the lower the educational level and family income, the greater the interval.

SUMMARY AND CONCLUSIONS

On the basis of these data from a Southwestern metropolitan community, several differences were noted in the dental practices of Chicanos and Anglos. In comparison to Anglos, Chicanos were found to have a higher proportion of tooth extractions and dentures, as well as a smaller proportion of routine

exams and/or cleanings and fillings. A substantially larger proportion of Chicanos than Anglos had not seen the dentist in the past year and of those who had, the pattern of frequency of visitations was a lesser number of visits for Chicanos than Anglos. Of the several explanatory variables used in each of the groupings' step-wise regression models, none were helpful in explaining frequency of visitations for Chicanos. For Anglos, however, education, family income, and age were relatively important. Nevertheless, the amount of explained variance in both groupings was very small.

A further examination of that category of persons who had not seen a dentist in the last year revealed that a larger proportion of Anglos than Chicanos had not visited a dentist in the last five years or more. However, a larger proportion of Chicanos never had been to a dentist. In attempting to explain these differentials, urban-rural residence and level of education were found to be relatively important for Chicanos while age, education and family income were important for Anglos. The amount of explained variance was higher in these models than the previous ones concerning the frequency of dental visits. These differences seem to be suggesting that different explanatory variables are at work for each of the two utilization categories (i.e., those who use dental services in the last year vs. who that did not). The proportion of explained variance is very small for both categories, and, for that matter, for both ethnic groupings. Thus, there are other explanatory factors at work that need to be explored, such as attitudinal, situational and cultural barriers to dental health. For the time being, it appears that Chicanos are inclined to use more of the "symptomatic orientation" type of dental care than the preventive. Also, at least on the basis of these data, the dental health of Chicanos appears to be not only substandard in comparison to the Anglo's, but also characterized by a symptomatic orientation.

These findings, then, leave us with at least two general conclusions to be entertained by further research. One is that the traditional social and economic variables used in the literature to explain dental behavior do not seem to explain dental behavior adequately, especially that of Chicanos. For example, based on the proportion of both Chicanos and Anglos below the poverty level (Table 2), one's initial reaction would probably be to control for percent below poverty in examining the types and frequency of visits, as well as the time since last seen a dentist. However, this simplistic approach of analysis neglects the multivariate effects of a complex phenomena. This being the case, it seems that if dental behavior is going to be researched adequately, then it must be examined from other perspectives besides the social and economic constraints. This would entail such areas as attitudes toward dentists, fear and anxiety factors, and cultural and situational constraints. In the case of Chicanos, this would involve dealing with such factors as: (1) deterrence which results from a language barrier, (2) ethnic differentials in the tolerance of pain, (3) attitudes toward dentists of a similar background, (4) quality of dentists, (5) different ethnic values concerning dental health, and (6) alternative sources of dental services besides the professional dentist.

The second general conclusion is a bit more complex. Considering that the dental health of Chicanos is substandard in comparison to that of Anglos and what seems to allude to these differences being due largely to other than social and economic constraints, what direction should policy take to improve the dental health of Chicanos? In other words, are the current cultural preservation and regeneration efforts of the Chicano inimical to the goals of achieving adequate dental health care? For example, assuming

that there are different ethnic values concerning dental health, should the Chicanos' value structure be brought in line (assimilated) with that of the Anglos', thus possibly insuring better dental health at the price of "giving up" a component of culture? This alternative suggests some normative judgments as to the proper desirability of particular dental care patterns. The definition(s) of better dental health may have to be reexamined or broadened. Or, can some other type of policy orientation be developed that will accommodate both the cultural preservation aspect and better dental health? For example, encouraging and facilitating the admission of bilingual/bicultural Chicanos into careers in dentistry at all levels. Nevertheless, keeping in mind that a prospective dental Chicano student may lose his (her) Chicano identity while in the educational stream. In addition, dental offices which are patronized by Spanish-speaking clientele should have bilingual/bicultural staff to serve as professionals and not merely as facilitators or language interpreters when needed. In essence, the task calls for a reciprocating relationship between the institution of dentistry and their clients rather than a nonrecursive relationship in which the client fulfills a subservient role. Still one other apparently important missing linkage between dental services and the Chicano dental client may be a lack of adequate knowledge about dental health and hygiene. This calls for an all out effort on the part of the dental profession, with the aid of federal, state, and local resources, to reach out and educate the Chicano population about dental health within its own cultural setting. In sum, the need for dental services is well documented. What remains to be cultivated is the demand for these services and the means to provide them. Clearly, these results only touch the tip of the iceberg and leave much to be explained.

FOOTNOTES

* A revision of a paper presented at the annual meeting of the Southwestern Social Science Association, March 30-April 2, 1977, Dallas, Texas. Our greatest appreciation is extended to Pima Health Systems, Inc., Tucson, Arizona, for the access to their data. This project was made possible by an Experimental Health Services Delivery System contract between Health Resources Administration, U.S. Department of Health, Education and Welfare, and Pima Health Systems, Inc., Tucson, Arizona. Pima Health Systems, started by the Health Planning Council in 1971 and now defunct, was an independent, not-for-profit community corporation with its own Board of Directors. The corporate members and the Board represented local public interest groups, providers of health care, third-party payers for health care, and local political entities.

Table 1. Socio-Demographic Characteristics of Chicano and Anglo Respondents

Characteristic	Total	Means Chicano	Anglo
Family Size	3.34	4.42	3.06
Family Income	$8130	$7320	$8250
Age	44.03	40.36	44.53
Educational Attainment	11.95	10.6	12.4
Percent Below Poverty	4.1	16.9	2.3

Table 2. Type of Dental Visit By Ethnicity

Type of Visit	Chicano		Anglo	
	No.	%	No.	%
Routine exam and/or cleaning	39	26.2	224	32.1
Fillings	44	30.0	239	34.3
Extractions	37	25.0	67	9.6
Cosmetic services/ oral surgery	11	7.5	91	13.0
Orthodontia	0	0.0	17	2.4
Dentures	17	11.3	58	8.3
Other	0	0.0	2	0.3
TOTAL	148	100.0	697	100.0

Chi Square = 33.75; d.f. = 6; p = .0000

Table 3. Frequency of Dental Visits in the Last Year By Ethnicity

Number of Visits	Chicano		Anglo	
	No.	%	No.	%
0	209	58.9	530	43.5
1	70	19.8	276	22.6
2	39	10.9	188	15.5
3-4	24	6.8	121	9.9
5-6	13	3.6	103	8.5
TOTAL	355	100.0	1218	100.0

Chi Square = 30.31; d.f. = 4; p = .0000

Table 4. Frequency of Dental Visits Regressed on Independent Variables By Ethnicity

Chicanos			Anglos		
Variable	b	B	Variable	b	B
Family Income	0.0751	0.0823	Education	0.2152*	0.1748
Sex	0.2239	0.0858	Family Income	0.0962*	0.1037
Age	0.1126	0.1267	Rural-Urban	0.4088	0.0569
Education	0.1056	0.1197	Age	-0.0657*	-0.0712
Rural-Urban	-0.1503	-0.0382	Sex	0.1476	0.0536
Family Size	0.0261	0.0235	Family Size	-0.0692	-0.0413
Neighborhood Residence	0.4775	0.0209	Neighborhood Residence	-0.0792	-0.0129
CONSTANT	-0.1414		CONSTANT	-0.1108	
R^2= .0295			R^2 = .0683		

*Significant at $\leq$ .05

Table 5. Time Since Last Seen the Dentist By Ethnicity

Time	Chicano		Anglo	
	No.	%	No.	%
12 to <18 mon.	11	6.0	36	7.1
18 to < 2 yrs	26	14.0	64	12.6
2 yrs to < 3 yrs	39	21.0	103	20.3
3 yrs to < 4 yrs	20	11.0	55	10.9
4 yrs to < 5 yrs	11	6.0	38	7.5
5 yrs or more	46	25.0	202	39.9
Never been	31	17.0	9	1.7
TOTAL	185	100.0	508	100.0

Chi Square = 63.61; d.f. = 6; p = .0000

Table 6. Time Since Last Seen the Dentist Regressed on Independent Variables by Ethnicity

Chicanos			Anglos		
Variable	b	B	Variable	b	B
Rural-Urban	1.8146*	0.2656	Age	0.3554*	0.2858
Education	-0.3482*	-0.2270	Education	-0.2166*	-0.1307
Neighborhood Residence	-0.5584	-0.1409	Family Income	-0.1237*	-0.0990
Family Size	-0.2456	-0.1272	Sex	-0.0379	-0.0102
Family Income	0.2062	0.1299	Rural-Urban	-0.0609	-0.0063
Age	-0.0848	-0.0549	CONSTANT	3.5360	
Sex	-0.1165	-0.0257	R^2 = .1439		
CONSTANT	3.4072				
R^2 = .1387					

*Significant at $\leq .05$

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